

## ABSTRACT

A method of fabricating lead-free solder bumps, including providing a wafer having a protective layer with an open electrode pad; forming an UBM (under bump metallization) layer on the wafer; lithographing a photoresist on the UBM layer, excluding a portion of the UBM layer corresponding to the electrode pad; forming a copper layer on the portion of the UBM layer corresponding to the electrode pad; plating solder on the copper layer; removing the photoresist; and etching the UBM layer using the solder as a mask, and reflowing the solder and fabricating solder bumps.